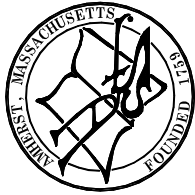


December 2001



Amherst Town Center Streetscape Design Guidelines Manual

Prepared for:

Amherst Planning Department

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4 Allen Place, Northampton, MA 01060

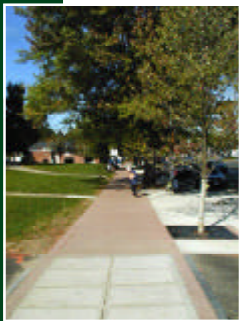
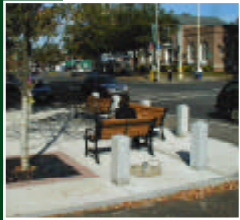
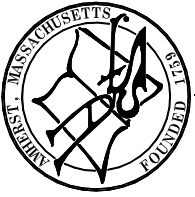


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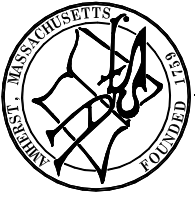
Introduction

This design manual has been prepared as part of the Town Center Sidewalk Design & Accessibility Project, administered by the Amherst Planning Department.

The purpose of the manual is to provide design guidelines for Streetscape projects throughout the Town Amherst. These design guidelines provide recommendations for safety, accessibility, furnish-

ings and amenities in order to encourage increased pedestrian traffic. The guidelines are a reference resource for the Town, to use for redevelopment or improvements of specific downtown areas. When new projects are commissioned, consultants can use this manual as a reference to ensure that new improvements will be consistent with the Town's standards.





Organization

This design manual has been divided into four sections: Pedestrian Paths and Crosswalks, Accessibility, Site Furnishings, Planting and the Appendix.

Pedestrian Paths and Crosswalks identifies different types of pedestrian traffic patterns and assigns each a specific surface treatment. For example, intense retail areas require a more pronounced, highly visible, and larger pedestrian travel way. High use crosswalks, crossing major vehicular traffic ways or adjacent to a bus shelter, require a treatment that is more visible than crosswalks over smaller side streets or driveways. Schematic design drawings, cross sections, and details are provided for each of the recommended surface treatments.

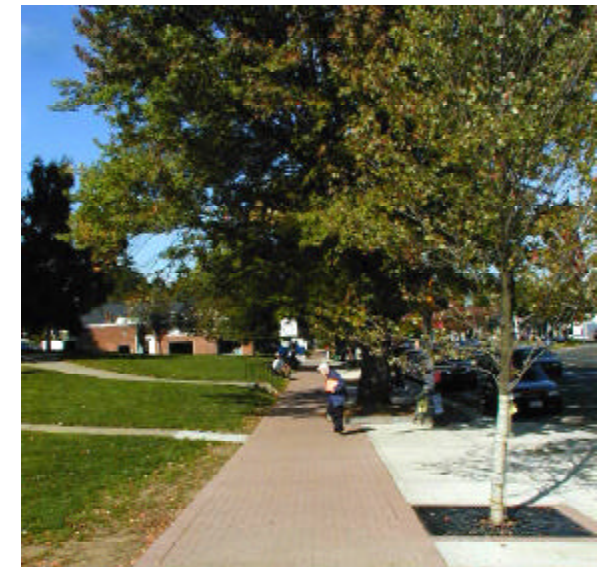
The Accessibility section makes recommendations aimed at maintaining universal accessibility throughout the downtown area. Recommendations include where to use tactile warning pavers and when to consider audible pedestrian signals.

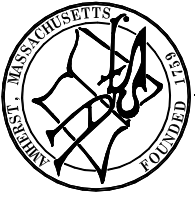
Site Furnishings specifies and details elements such as benches, trash receptacles, and lighting. These standard furnishings are recommended for use on new projects proposed throughout the downtown area.

The planting section offers a list of suggested plant materials for various situations. Planting techniques and details are provided as guidelines for landscape contractors.

Each section is intended to give a clear and concise summary of how to deal with these elements in the landscape. Sections include photographs of design recommendations and also areas where improvements are needed.

The Appendix contains construction diagrams for kiosk construction.



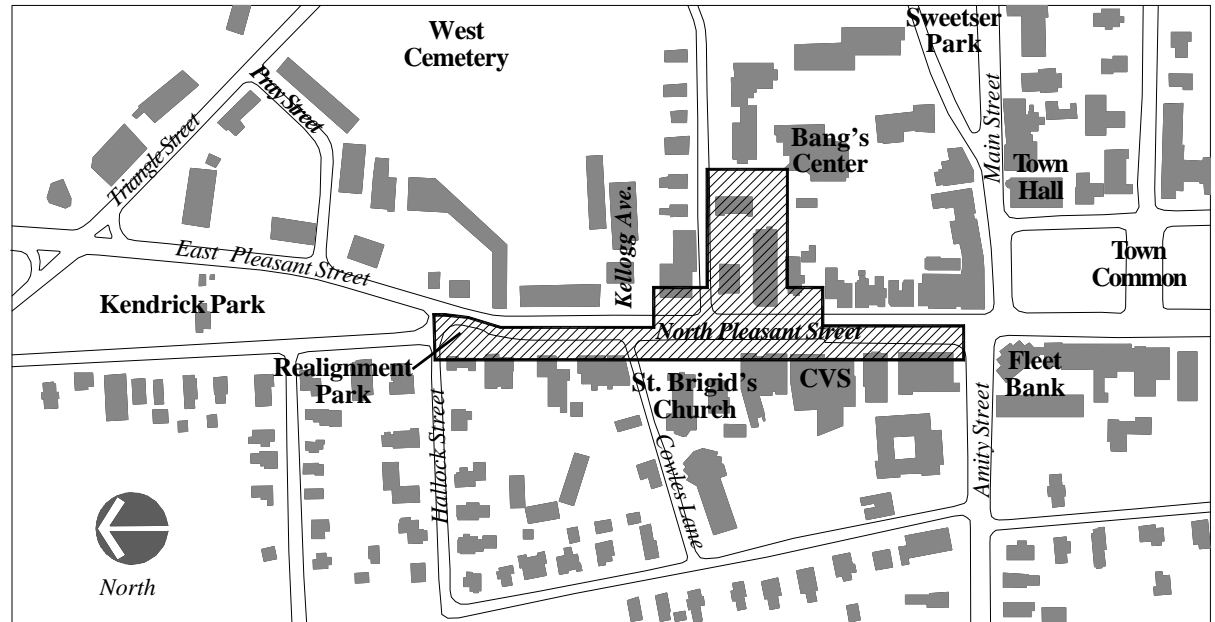


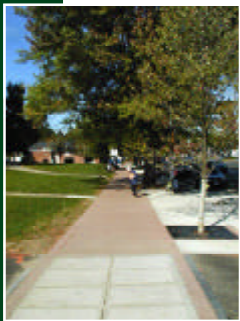
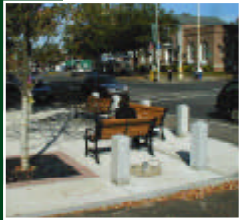
Area of Study

This manual is designed to be applied to all pedestrian areas in downtown Amherst and was prepared in conjunction with construction documents for the Phase I improvements plan. The initial study area extends from the crosswalk to Hallock Street on the west side of North Pleasant Street, and from the Douglas Funeral Home driveway to the U.S. Post Office on the east side of North Pleasant Street. Accessibility along Kellogg Avenue as well as within Boltwood Walk was reviewed in addition

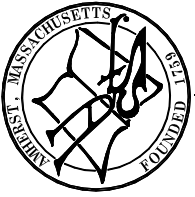
to three other critical accessibility problem areas. These include the intersection of Spring and South Pleasant Streets, the intersection of East Pleasant and Triangle Streets, and the East Pleasant/Pray Street intersection. Through design recommendations for these specific areas, consultants for new town center projects will be able to develop solutions that result in consistent overall design.

*Initial Downtown
Study Area*





Pedestrian Paths & Crosswalks



Pedestrian Paths & Crosswalks

Different parts of downtown Amherst experience different levels of pedestrian use, and therefore require specific surface treatments that address the needs of those areas. More heavily travelled retail areas require a more pronounced and larger pedestrian path. Busy crosswalks adjacent to bus shelters may require a treatment that is more visible than crosswalks serving side streets. This section defines which areas within the study area fall into each category, and shows design plans, cross sections and construction details for the installation of recommended surface treatments.

Primary Retail Areas

This classification refers to the busiest retail stretches in the downtown, where pedestrian traffic flow is heavy. In the Phase I study area, this is between the Fire Station crosswalk and Cowles Avenue on the west side of North Pleasant Street, and between the funeral home driveway and Kellogg Ave. on the east side of N. Pleasant St.

Secondary Retail Areas

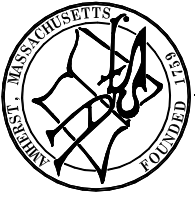
This classification refers to the busy pedestrian areas within the downtown. Areas such as the stretch from Cowles Avenue northerly toward Hallock Street fall into this classification.



Primary Retail Area



Secondary Retail Area



Primary Retail Areas

Design Guidelines

In the primary retail areas, one main 8' wide pedestrian travel way is recommended, consisting of red 4" x 8" precast concrete pavers resembling brick. The pavers would be set on a concrete base in a running bond pattern, with one soldier course along each side. Where the pedestrian travel way makes a 90° angle toward a storefront, crosswalk or bus shelter area, the direction of the running bond shall be turned perpendicular to that of the main thoroughfare.

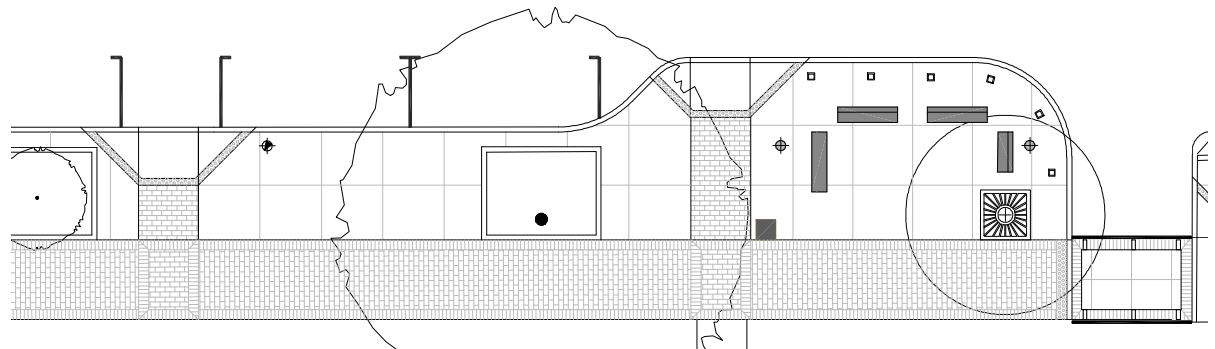
On the private property side of this walkway, business owners are encouraged to take care in designing and maintaining aesthetically pleasing front yards. In some cases, suggestions have been made for the treatment of private front yards. (See proposals for the Unitarian Church and Robert's Block.)

On the street side of the main pedestrian thoroughfare, concrete paving extends to the curbed street edge. It shall be scored in a 5' or 6' square pattern, as appropriate to the area.

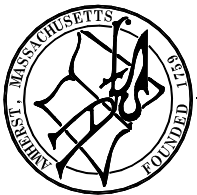
Existing street trees within the project sites are to be protected and tree wells improved where possible. Within the primary retail area, new street trees shall be planted within expandable tree grates. (See Planting section for acceptable species.)



Primary Retail Area



Typical plan of proposed improvements in a primary retail area.



Existing Sidewalk



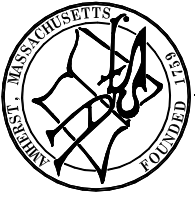
After Sidewalk Construction



Existing Sidewalk



After Sidewalk Construction



Secondary Retail

Design Guidelines

In the secondary retail area, one main 6' wide pedestrian travel way is recommended, consisting of red 4" x 8" precast concrete pavers, resembling brick. The pavers would be set on a concrete base in a running bond pattern with one soldier course along each side. Where the pedestrian travel way makes a 90° angle toward a storefront or crosswalk, the direction of the running bond shall be turned perpendicular to that of the main thoroughfare.

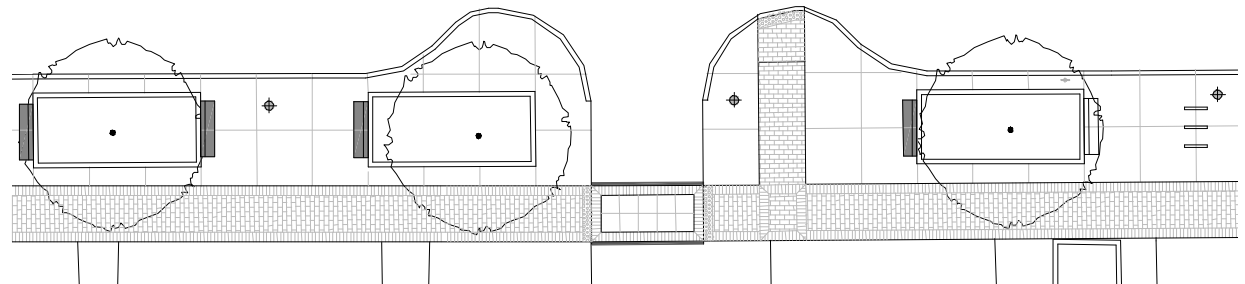
On the private property side of this route, business owners are encouraged to take care in designing and maintaining aesthetically pleasing front yards.

On the street side of the main pedestrian thoroughfare, concrete paving extends to the curbed street edge. It shall be scored in a 5' or 6' square pattern, as appropriate to the area.

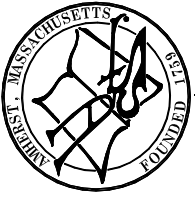


Secondary Retail Area

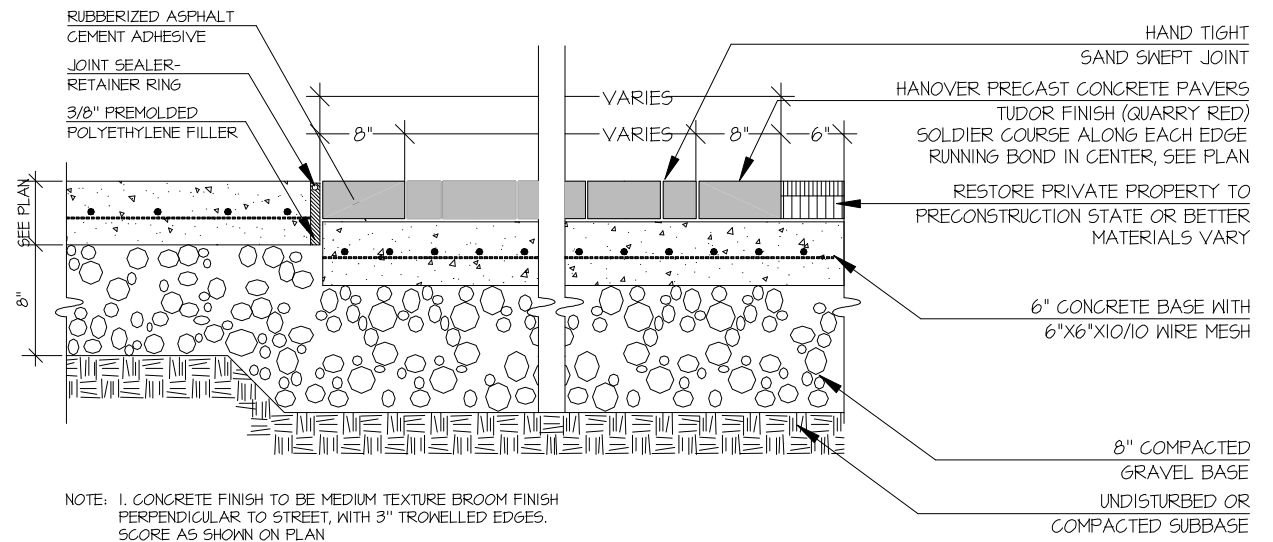
Existing street trees within the project sites are to be protected and improved where possible. Within the secondary retail area, new shade trees shall have a planting bed beneath which extends no less than 6' toward each side. Provide a 3' wide strip between this planting bed and the face of the curb to prevent grass from wearing where pedestrians use parking meters.

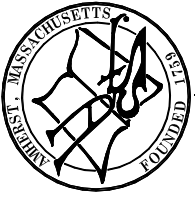


Typical plan view of proposed improvements in a secondary retail area.



Primary & Secondary Retail Area Sidewalks *Construction Detail*





Primary Crosswalk

Primary crosswalks cross major vehicular traffic patterns or are located in areas where high visibility is critical to pedestrian traffic safety. Examples include the two crosswalks which cross North Pleasant Street within the Primary Retail district. The CVS driveway is another primary crosswalk because of heavy pedestrian use, heavy vehicular traffic, vehicular speed and limited sight lines.



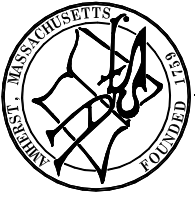
Primary crosswalk.

Secondary Crosswalk

Secondary crosswalks cross secondary roadways or driveways. Pedestrian safety is of equal importance in these areas, but vehicular traffic may be less intense or at a lower speed and visibility is generally not a problem.



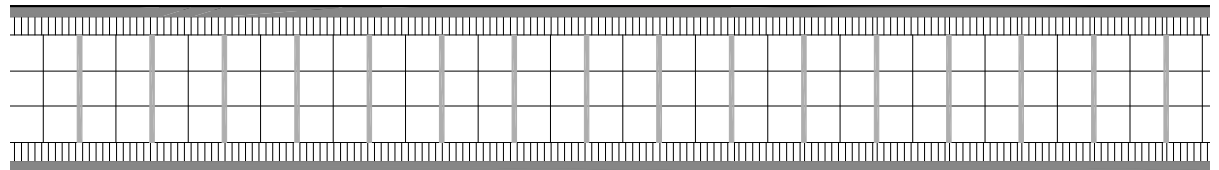
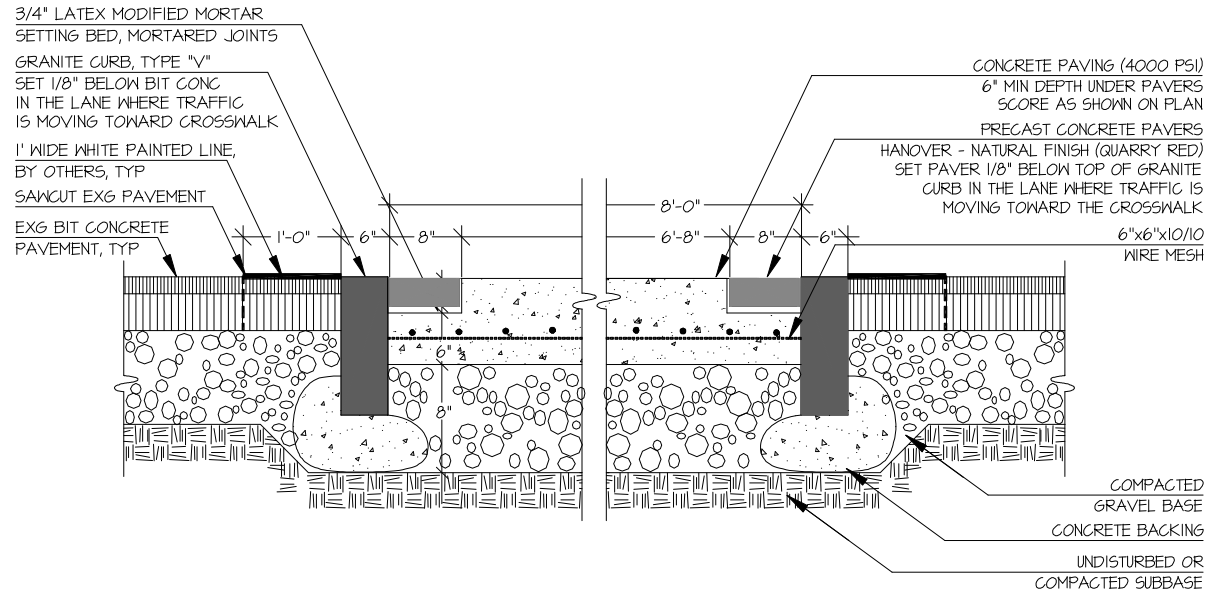
Secondary crosswalk.



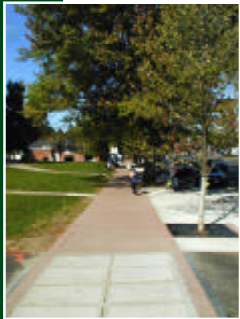
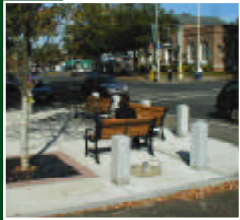
Crosswalks

Design Guidelines & Construction Detail

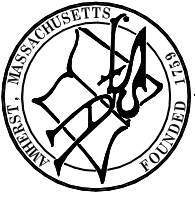
For both primary and secondary crosswalks, a central, 6" thick concrete walk is proposed. Red 4" x 8" precast concrete pavers, resembling brick, set soldier course is recommended along each side. Primary crosswalks have a total width of 8'; secondary crosswalks are 6' wide. Primary crosswalks may contain lighted pavers that shall be considered on an individual basis.



Plan view.



Accessibility



Accessibility

A leader in demonstrating universal accessibility during the 1970's, the Town of Amherst needs to pursue ongoing access improvements. Heaving at expansion joints, shifting along curbstones and deterioration of bituminous concrete surfaces has created serious tripping hazards throughout the downtown area. In addition, inconsistent and varied pavement types make wayfinding difficult for people with sight impairments.

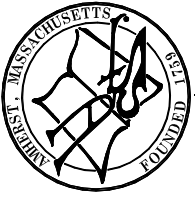
The purpose of this section is to illustrate proposed methods of maintaining universal accessibility on pedestrian pathways throughout the downtown area. The section is organized into categories describing types of access problems and outlining solutions for each.



Accessibility at Boltwood Walk.



Amherst needs to pursue ongoing access improvements.



Areas for Improvement

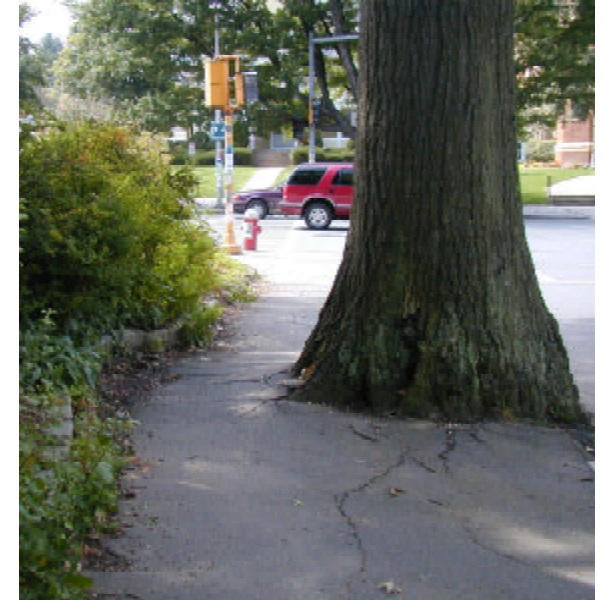
Curb Cuts & Crosswalks

At intersections, accessibility is often poor and wayfinding is unclear. Existing curb ramps are not always ADA compliant. The accessible route is not always direct or clear, and visually-impaired persons may not know where or when it is safe to enter the roadway. At the East Pleasant Street/Triangle Street intersection, for example, angles are confusing and curb ramps are not wide enough.

Pavement Deterioration

The paved walkway outside of Rao's Coffee House in Boltwood Walk, a heavily used gathering space, has been heavily damaged by the roots of nearby shade trees and is no longer ADA compliant. Because these trees provide a wonderful shaded canopy, accessible redesign should save the trees while providing an even, traversable surface.

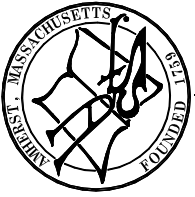
Accessibility on the sidewalk along the south side of Kellogg Street is also a concern. Large tree roots have heaved the pavement and adjacent vegetation has grown in, resulting in a nearly impassable sidewalk. Again, the challenge is to improve access while retaining the trees.



Kellogg Street has become nearly impassable for the disabled pedestrian.

Inaccessible Surfaces

Several areas within the downtown were paved in the 1960's with decorative granite cobbles. The surface of these pavers is uneven and rough, which makes these areas inaccessible to many.



Accessibility

Design Guidelines

Curb Cuts & Crosswalks

At intersections, the alignment of crosswalks shall be perpendicular to the vehicular traffic pattern where possible.



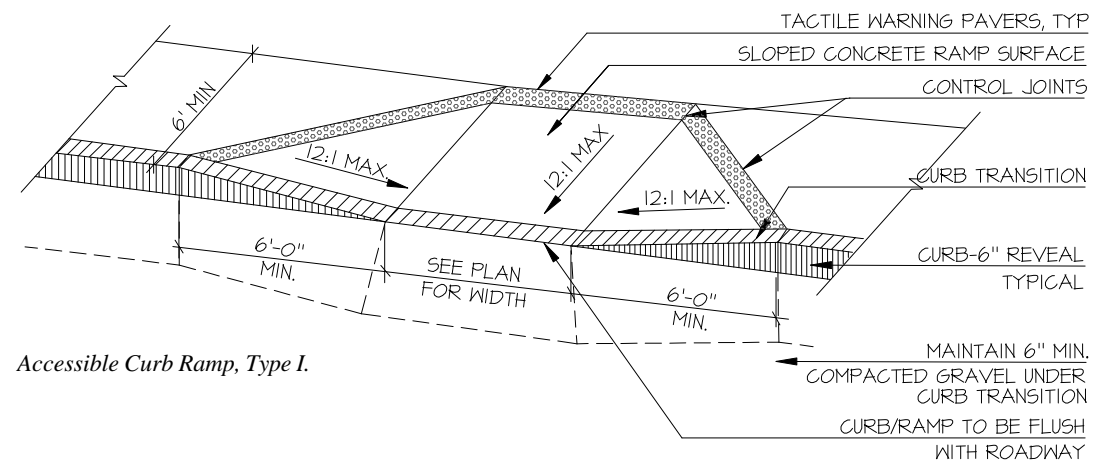
Deteriorated curb cuts shall be replaced as described below and shown on the following details. At all accessible curb ramps, the break in slope along the main pedestrian thoroughfare and along the top of flared sides shall be paved with tactile warning pavers to indicate to visually impaired persons that a break in slope is occurring and that they are entering into the accessible curb ramp.

All accessible curb ramps shall have a maximum slope of 1:12 along both the route of travel and the flared

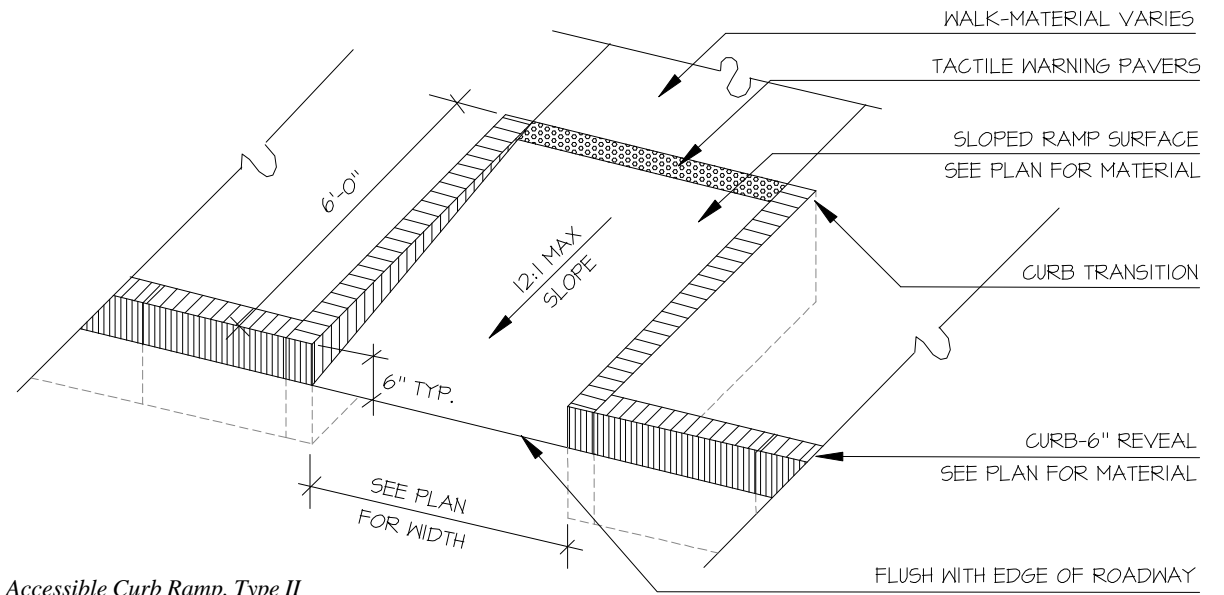
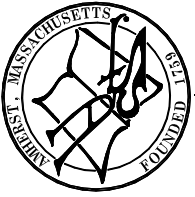
sides. In addition, accessible curb ramps shall not require people to turn on an inclined surface. If constructed as shown below, the pedestrian will be able to continue along a straight line perpendicular to the street. If the pedestrian needs to make an immediate right or left hand turn, there should be a level landing area beyond the inclination on which the user can turn.

Curb ramps with vertical sides, type II shall only be used when abutting landscaped areas not designed for pedestrian traffic.

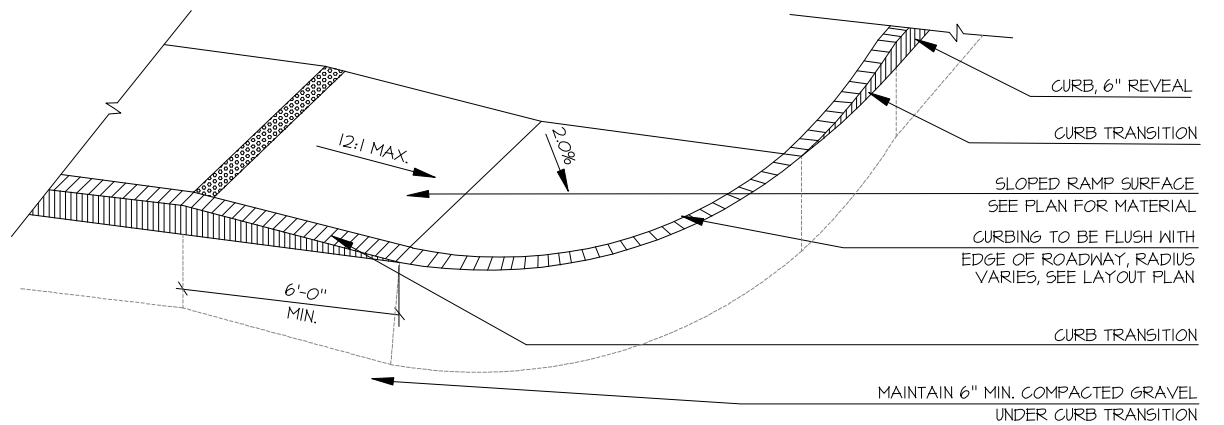
Throughout the downtown area, granite curbing with a minimum of 6" reveal should be installed to help distinguish walkways from roadways. All walkways shall have a maximum cross slope of 2%, 1½% is preferable.



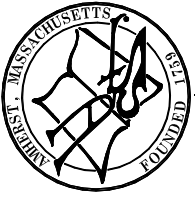
Accessible Curb Ramp, Type I.



Accessible Curb Ramp, Type II



Accessible Curb Ramp, Type III



Improvement Suggestions

Pavement Deterioration

In pathway or plaza situations, like that in front of Rao's, where tree roots are causing heaving problems, raised tree planters have been proposed to accommodate the tree roots. These planters will relocate pedestrian traffic away from the sensitive areas surrounding trees.

Along Kellogg Avenue, where roots have made the sidewalk impassable, the walk will be widened to provide a minimum of five feet of clear width. In some cases, it may be necessary to erect retaining walls. Walks may also be slightly raised so that pedestrians can travel on a level plane over the tree root systems.

Inaccessible Surfaces

Several areas within the downtown were paved in the 1960's with decorative granite cobbles. The surface of these pavers is uneven and rough, which makes these areas inaccessible to many. These types of pavers are not recommended for use in public areas unless they are installed on a 1" mortar setting bed over concrete. Concrete shall have a minimum thickness of 4" unless surface will accommodate vehicular traffic, in which case concrete shall be 6" thick.



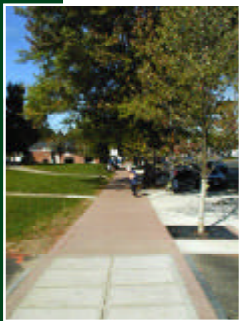
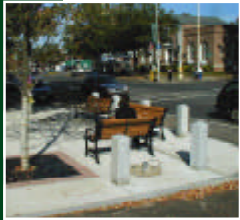


The intersection of Triangle and East Pleasant Street is an example of where evaluation for APS is warranted.

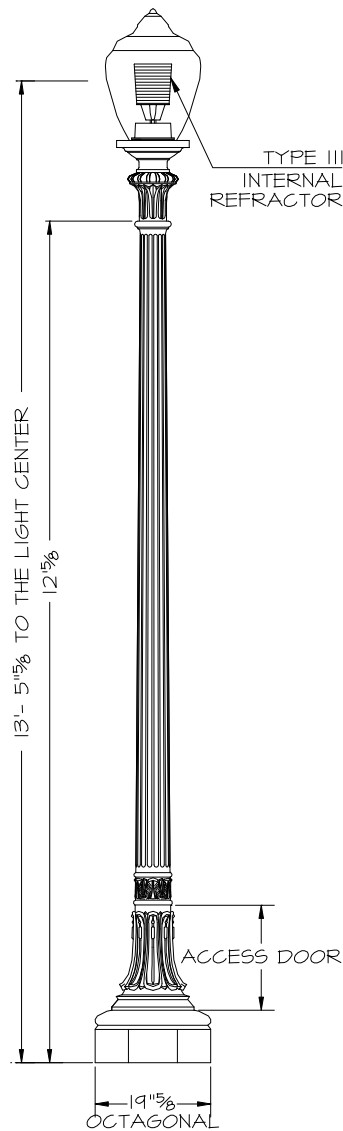
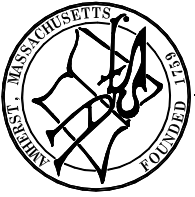
In certain situations, it may be necessary to construct a traditional handicap ramp with handrails. Project proponents should refer to the latest ADA construction guidelines manuals or call their technical assistance center at (800) 949-4232.

-
- The image contains two architectural drawings of a ramp:
- Cross-Section View (Left):** Shows a vertical section of the ramp. It includes a concrete base with a width of 5'-4". A 2" diameter post supports a 1-1/2" wide x 1/2" thick "L" support welded to the post and rail. The total height from the base to the top of the rail is 20". There is a 48" clear opening at the top.
 - Plan View (Right):** Shows the horizontal layout of the ramp. Key dimensions include:
 - Ramp width: 6"
 - Handrail offset: 12"
 - Total width including handrails: 24"
 - Concrete footing width: 8"
 - Gravel base width: 12"
 - Subgrade width: 8"
 - Handrail radius: 2" RAD. TYP.
 - Handrail material: 1-1/2" O.D. PIPE HANDRAIL W/ ONE COAT PRIMER AND TWO COATS BLACK EPOXY. CONTRACTOR TO SUBMIT SHOP DRAWING.
 - Post material: 2" O.D. PIPE POST & END CAP W/ ONE COAT PRIMER AND TWO COATS BLACK EPOXY. FOUR (4) POSTS EVENLY SPACED. CONTRACTOR TO SUBMIT SHOP DRAWING.
 - Decorative pavement: SEE CONCRETE PAVING DETAIL DECORATIVE PAVEMENT SEE DETAIL.
 - Concrete ramp: SEE CONCRETE PAVING DETAIL.
 - Concrete footing: 3000 PSI.
 - Gravel base: 8" MIN. COMPACTED GRAVEL BASE.
 - Subgrade: UNDISTURBED OR COMPACTED SUBGRADE.
- SECTION**
- Conceptual ramp.
Refer to latest ADA
design guidelines.*

*Conceptual ramp.
Refer to latest ADA
design guidelines.*



Site Furnishings



Site Furnishings

This section specifies site furnishings for use throughout the pedestrian areas of downtown Amherst. They include: light fixtures, benches, bike loops, trash receptacles, tree grates, bollards, pedestrian kiosks, newspaper enclosures and parking meters.

Lighting

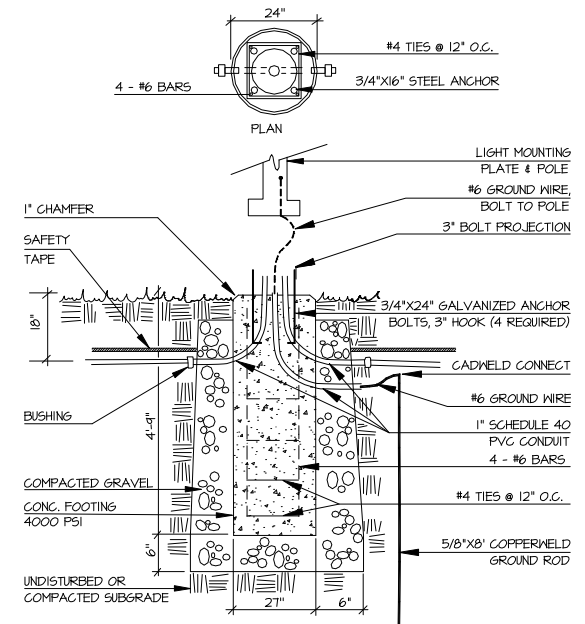
Street lighting must provide a safely lit nighttime environment for both pedestrians and motorists. Lighting can also serve a valuable aesthetic function. Certain areas may be highlighted by increasing the concentration of light fixtures. Such fixtures can serve a daytime role as sculptural objects by defining areas, announcing entries or transition zones and providing transitions between the scale of tall buildings and adjacent pedestrian areas.

Luminaires

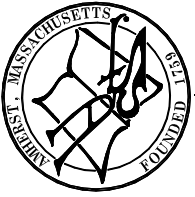
Manufacturer: King Lighting
Model: K199-LPR-III-MH175-K18-PBC-BK
Material: Rippled polycarbonate
Casting: Black polyester powder
Local Rep: Spec-lines
 (as of 9/2001) 32 Wianno Avenue
 Osterville, MA 02655
 (508) 420-8253

Lamp Post

Manufacturer: Spring City Electrical
Style: Spring City Parkwood
Height: 11'6"
Material: Cast iron per ASTM A48-83 Class 30
Finish: Black polyester powder
Local Rep: Spec-lines
 (as of 9/2001) 32 Wianno Avenue
 Osterville, MA 02655
 (508) 420-8254



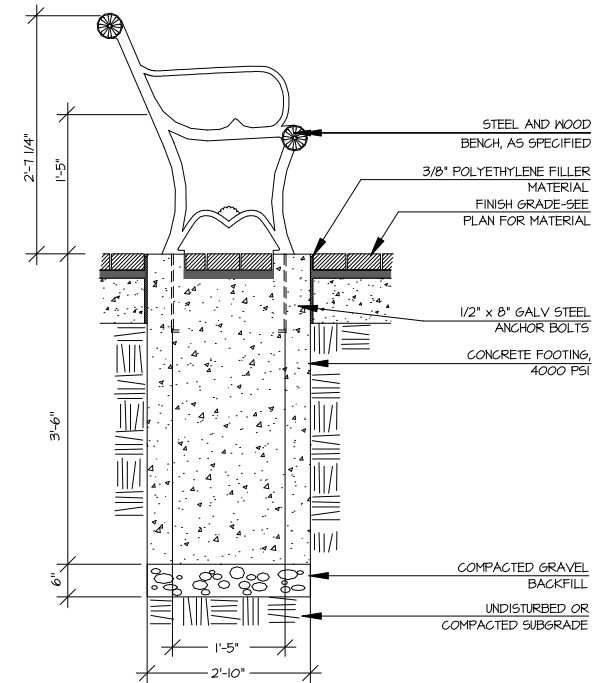
NOTES : 1. ALL LIGHTING PRODUCTS AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.



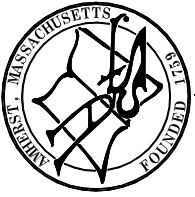
Benches

The benches below have been selected for their comfort and durability. These benches should be used in parks, commons and historic districts.

Manufacturer: DuMor, Inc.
Model No: 57-60D
Supports: Cast iron
Slats: 2" x 3" nominal
Clear Douglas Fir Slats
Color: Black polyester powder
Length: 6'
Local Rep: M.E. O'Brien & Sons
(as of 9/2001) 93 West Street
P.O. Box 650
Medfield, MA 02052
(800) 835-0056



Typical bench. Color to be black with Douglas Fir slats.



Benches

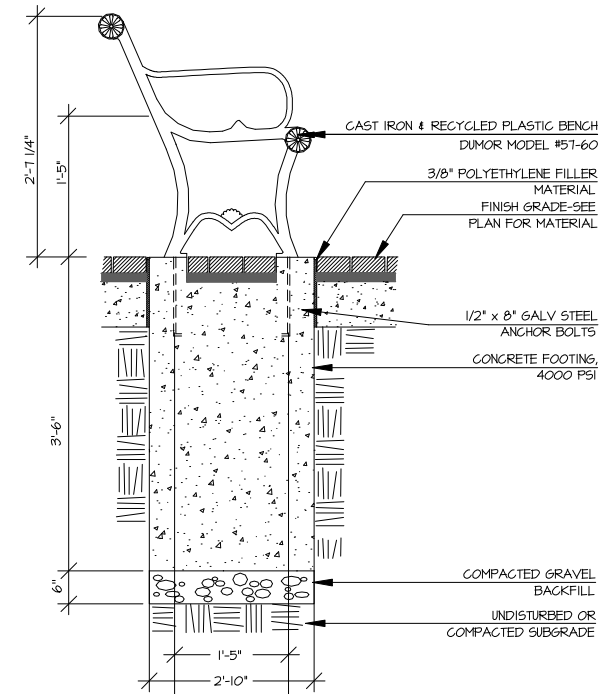
These benches, with recycled plastic slats should be used in high traffic areas and at bus stops.

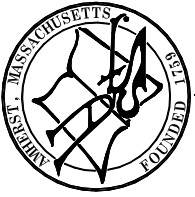
Manufacturer: DuMor, Inc.
Model No: 16-40/16-60
Supports: Cast iron
Slats: 2" x 4" nominal
cedar colored
recycled plastic

Color: Black polyester powder
Length: 4' or 6'
Local Rep: M.E. O'Brien & Sons
(as of 9/2001) 93 West Street
P.O. Box 650
Medfield, MA 02052
(800) 835-0056



Typical bench. Color to be black with cedar colored recycled plastic slats.

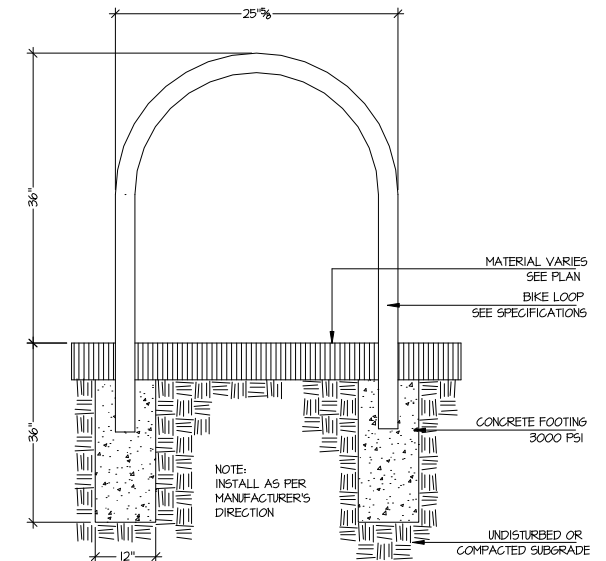




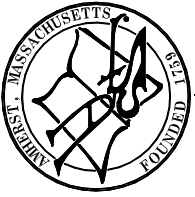
Bike Loops

The bike loops illustrated below were selected for their strength and styling. These bike loops offer flexibility without being intrusive to the streetscape. Their inconspicuous style will not detract from the main pedestrian route.

Manufacturer: Madrax
Model No: Madrax UX190-IG-P
Pipe: 1.5" Schedule 40 Iron
0.148" Wall thickness
Coating: 0.125" PVC jacket applied
to primed surface; black
Capacity: 2 Bicycles
Representative: Madrax
2210 Pinehurst Drive
Middleton, WI 53562
(800) 448-7931



*Typical
bike loop.*



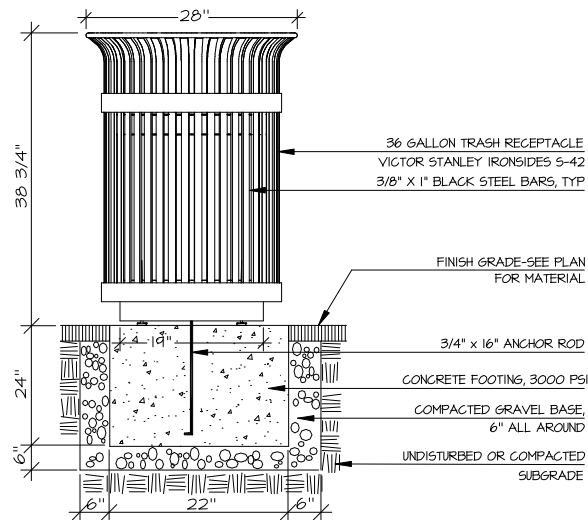
Trash Receptacles

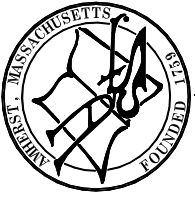
Trash receptacles shown have been chosen for their historic character and coordination with the chosen benches. Because of the classic nature of the structure, these receptacles will not “date” the downtown streetscape.

Manufacturer: Victor Stanley
Model No: Ironsites S-42
Color: Black
Size: 36-gallon
Option: Top Opening
Representative: Victor Stanley
(as of 9/2001) Dunkirk, MD
(800) 368-2573



Typical receptacle. Color: to be black.



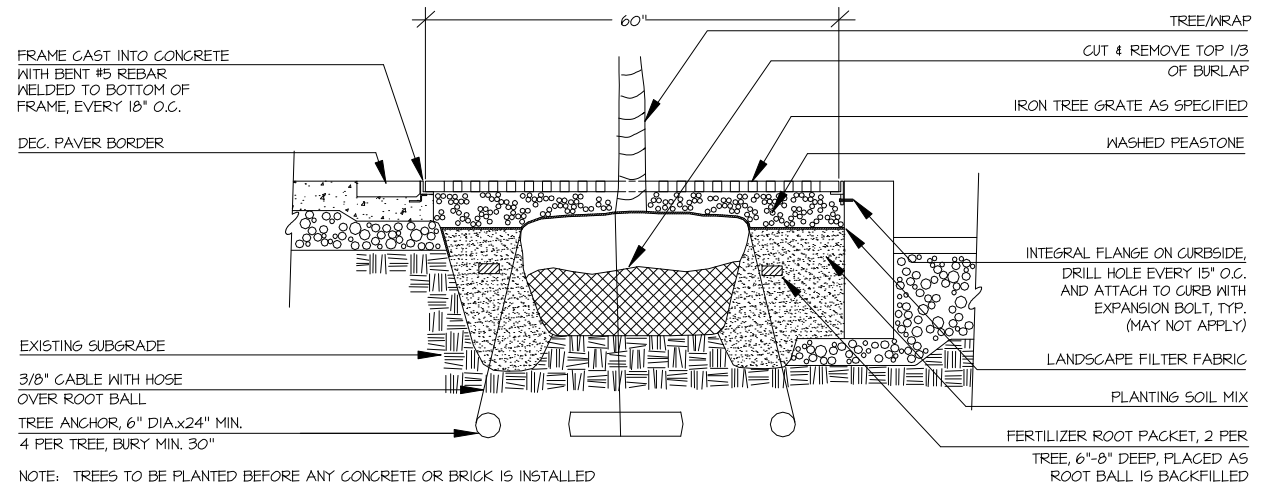


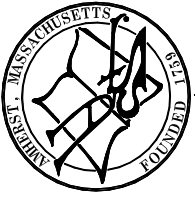
Tree Grates

Cast iron tree grates are recommended because they provide the advantage of being easily expandable without losing their structural integrity. Over the years, as tree trunks become larger, the opening can be enlarged in increments to accommodate tree growth. This can be done by using an abrasive cutting wheel or hacksaw. Notch the radial spokes at the junction of the expansion rings. Then break away the portion to be discarded.

See more tree planting details and information on structural soil in the Planting section.

Manufacturer: Neenah Foundry Co.
Model No: R-8713 Square
Size: 60" square
Local Rep: Mel Grant Associates
 (as of 9/2001) P.O. Box 175
 Needham, MA 02192
 (800) 345-1432





Bollards

Bollards serve to protect pedestrian walkways, signage and utilities from vehicular traffic without creating accessibility barriers. They are also used to help define the edges of an outdoor gathering space.

Design Considerations

Bollards should be placed close enough together to prevent vehicles from entering, yet far enough apart to maintain universal accessibility; 6'-8' on center is recommended.

The materials used to construct bollards should be durable and adequate to deter vehicles, and should reflect the materials chosen for the immediate surroundings. Through correct spacing and scale, bollards can continue rhythms of adjacent buildings or structures.

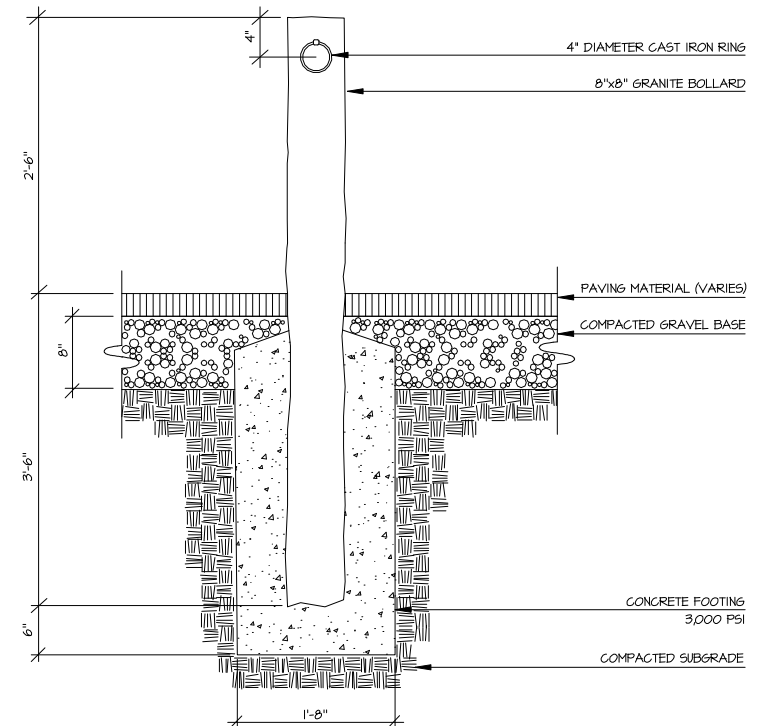
Three types of bollards (granite, cast iron & steel) have been chosen for work within the downtown area. Designers will be able to select which is more appropriate for the particular setting and project type.

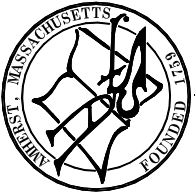
Granite Bollards

Custom granite bollards have been designed for use throughout the streetscape area. They can be seen along North Pleasant Street at the intersection with Cows Lane.



Typical granite bollard.

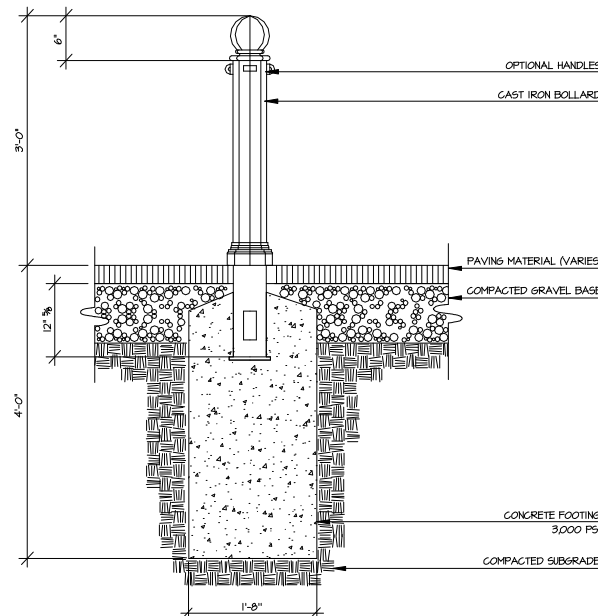




Cast Iron Bollards

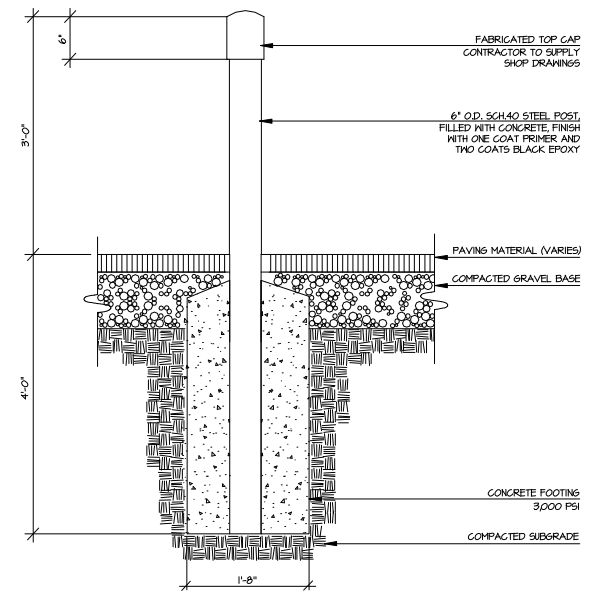
Bollards specified below come with or without “tea-cup” handles on each side to accommodate chain barricades. They can also be removable or permanent.

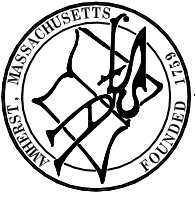
Model No: 2988.000 permanent
2988.001 removable
Color: Black
Material: Nodular Cast Iron
Manufacturer: NERI Corp.
Local Rep: Spec-Lines
(as of 9/2001) 32 Wianno Avenue
Osterville, MA 02655
(508) 420-8254



Steel Bollards

Concrete filled steel bollards are included in the Guidelines, as they may be the most economical alternative where bollards are needed. While they are the least desirable aesthetically, these bollards offer strength and durability.





Granite Curb

Granite curb has been chosen for the downtown for its durability and natural beauty. Granite curb shall be Massachusetts Highway Department standard, vertical or sloped, depending upon use and location. It shall be installed with 6" reveal per MHD standards specifications.

Bus Shelters

Design of bus shelters for the downtown area will be subject to review by the Town. In general, shelters should be simple in design with little maintenance required.



BIG Enterprises TS610DM bus shelter.

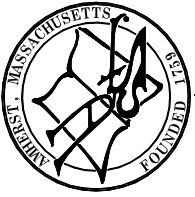
Drinking Fountains

Drinking fountains will be subject to review by the Town. In general, fountains should be considered accessible, simple in design with little maintenance required.

Shown here is an accessible drinking fountain by Murdock. Made of cast iron, it is capable of withstanding all kinds of environmental conditions as well as vandals. Inner parts are removable for fast maintenance.



*Murdock M-23
accessible drinking fountain.*

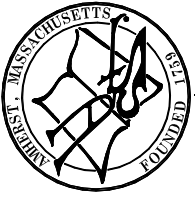


Kiosks

Kiosks provide information or direction to pedestrians and can identify the location of a particular site or attraction. When siting kiosks, many factors must be taken into account including ensuring pedestrian visibility, while minimizing obstruction of vehicular visibility. Kiosks can also be used as sculptural elements in the urban landscape, providing a vertical element in an otherwise, flat environment.

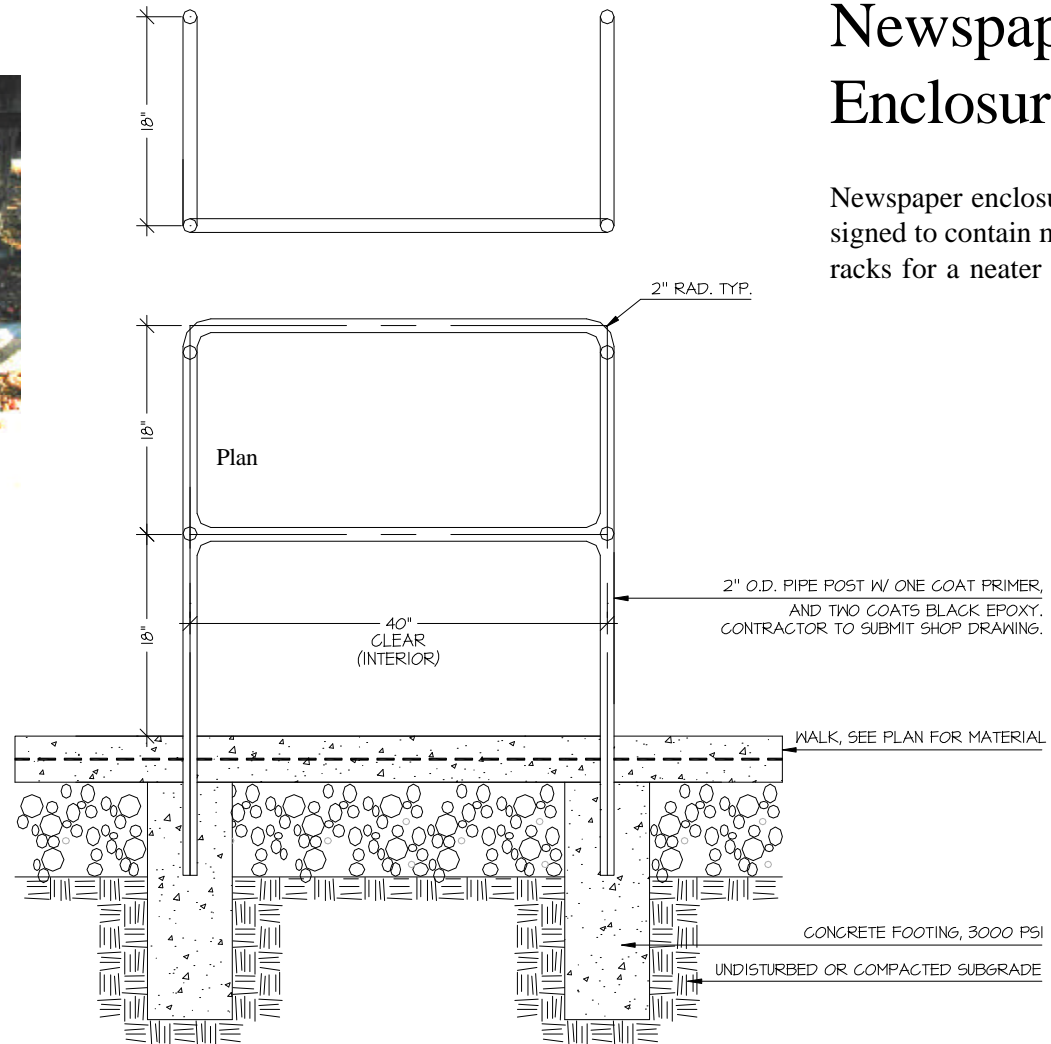
The Town of Amherst has a custom designed kiosk which serves as the principal pedestrian sign in its downtown wayfinding sign system. See drawings in Appendix.



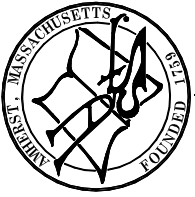


Newspaper Enclosures

Newspaper enclosures have been designed to contain multiple newspaper racks for a neater appearance.



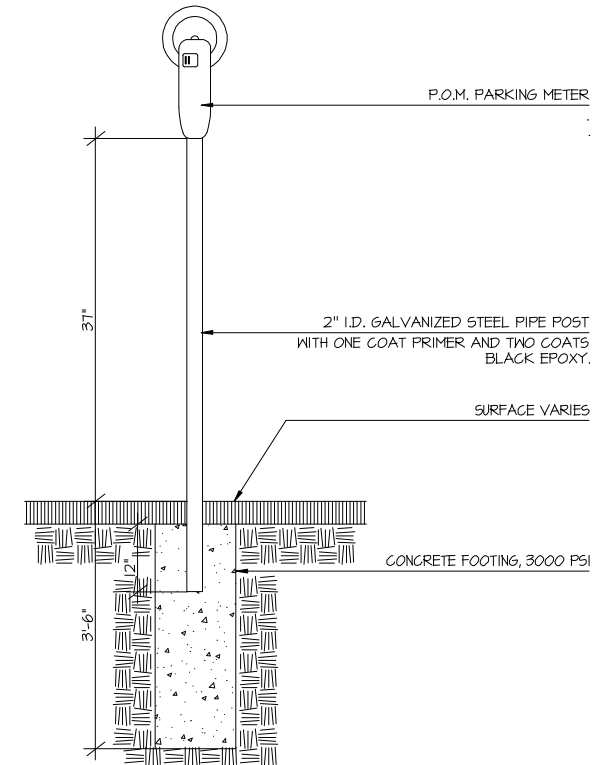
NOTE:
ALL WELDS TO BE GRIND SMOOTH.
CONTRACTOR TO SUBMIT SHOP DRAWING PRIOR TO FABRICATION.

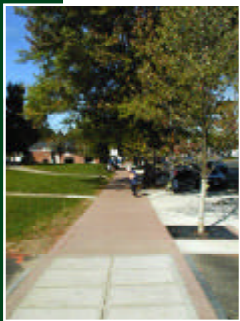
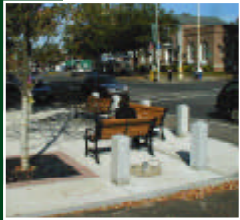


Parking Meters

New, state-of-the-art parking meters have been chosen to reduce the number of meter poles and clutter which currently overload the downtown streetscape area. Again, functionality will aid in making the downtown more user-friendly.

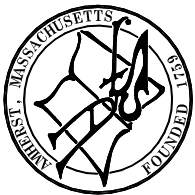
<i>Manufacturer:</i>	<i>P.O.M.</i>
<i>Twin Adaptor:</i>	<i>#300-326 cruiser gray</i>
<i>Meter Housings:</i>	<i>N-APM complete meter housing, cruiser gray</i>
<i>Material:</i>	<i>Ductile Iron</i>
<i>Other:</i>	<i>Sealed Coin Box</i>
<i>Representative:</i>	<i>P.O. Box 430 Russellville, AR 72811 (800) 331-7275</i>





Planting





Planting

Trees are of great importance to the character of the Town of Amherst and removal or damage to healthy, significant trees shall be avoided wherever possible, especially along roadways. Planting of new or replacement trees along roadsides and for significant relief of parking areas and architectural mass is required to reinforce rural character and perpetu-

ate the environment created by mature trees.

Following is a list of recommended trees for use throughout the downtown. The list is intended to be a guideline, but project proponents are encouraged to propose use of other species they feel may enhance the character of the town.

Material Suggestions

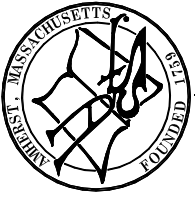
Civic Scale Shade Trees (Minimum 40' Tall at Maturity)

<i>Latin</i>	<i>Common</i>	<i>Size</i>
Acer rubrum 'October Glory'	October Glory Red Maple	3" caliper
Acer saccharum 'Commemoraton'	Commemoration Sugar Maple	3" caliper
Acer saccharum 'Legacy'	Legacy Sugar Maple	3" caliper
Cercidiphyllum japonicum *	Katsura Tree	3" caliper
Ginkgo biloba (Male species)	Ginkgo	5-6' potted
Gleditsia triacanthos inermis	Honeylocust	3" caliper
Metasequoia glyptostroboides	Dawn Redwood	6-8' potted
Quercus alba	White Oak	3" caliper
Quercus rubra	Red Oak	3" caliper
Quercus palustris	Pin Oak	3" caliper
Tilia cordata 'Greenspire'	Greenspire Little Leaf Linden	3" caliper
Zelkova serrata 'Green Vase'	Green Vase Zelkova	3" caliper

Specimen Shade Trees (Minimum 25' Tall at Maturity)

<i>Latin</i>	<i>Common</i>	<i>Size</i>
Acer griseum	Paperbark Maple	6-7' clump
Koelreuteria paniculata	Golden Rain Tree	6-7' potted
Oxydendrum arboreum	Sourwood	6-7' potted

* Should not be utilized in areas where planting will not be regularly maintained



Material Suggestions cont'd

Ornamental Trees

<i>Latin</i>	<i>Common</i>	<i>Size</i>
<i>Cercis canadensis</i>	Eastern Redbud	2.5" caliper
<i>Cornus florida rubra</i>	Pink Flowering Dogwood	2" caliper
<i>Crataegus viridis</i> 'Winter King'	Winter King Hawthorne	2.5" caliper
<i>Prunus cerasifera</i> 'Thundercloud' **	Thundercloud Plum	2.5" caliper
<i>Pyrus calleryana</i> 'Bradford'	Bradford Callery Pear	2.5" caliper
<i>Sophora japonica</i>	Scholar Tree	2.5" caliper
<i>Syringa reticulata</i>	Japanese Tree Lilac	2.5" caliper

Screening

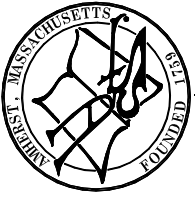
<i>Latin</i>	<i>Common</i>	<i>Size</i>
<i>Abies concolor</i>	White Fir	7-8' height
<i>Picea glauca</i>	White Spruce	7-8' height
<i>Pinus nigra austruaca</i>	Austrian Pine	7-8' height
<i>Pinus strobus</i> *	Eastern White Pine	7-8' height

Ground Cover & Slope Protection

<i>Latin</i>	<i>Common</i>	<i>Size</i>
<i>Forsythia x intermedia</i>	Border Forsythia	2-3' height
<i>Juniperus horizontalis</i>	Creeping Juniper	24"
<i>Hedera helix</i> 'Baltica'	Baltic English Ivy	2.5" plug

* Should not be utilized in areas where planting will not be regularly maintained

** Only varieties resistant to Black Knot disease



Structural Soil

For Use in

Primary Retail Areas

Structural soil is a manufactured soil composed of a uniformly blended mixture of crushed stone, clay loam and hydrogel. It is used where area for tree root growth is limited. This area is frequently limited in streetscape situations where gravel base for sidewalks and roadways must be compacted to meet engineering specifications. Structural soil can compact to meet these specifications while allowing roots to grow freely. Roots are able to grow deeper and away from the paved surfaces, therefore accessing water and needed nutrients.

An ideal structural soil application would be a generous, linear trench within the tree belt, linking all of the street tree plantings, providing a significant area for root growth. Where this is not possible due to vertical obstructions or is prohibited by cost, individual pockets of structural soil should be considered. These pockets should be a minimum of 14' x 14' by 30" depth. Depth may be increased if the entire area is paved; however, larger shared spaces are always preferable. See tree grate detail on page 27.

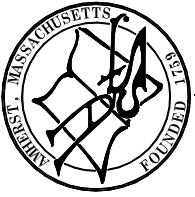
For more information on structural soil, contact Nina Bassuk at nlb2@cornell.edu. Structural soil is available from the following area distributors:

Boston Sand & Gravel, Boston, MA
(617)227-9000, (617) 523-7947 fax
Contact: Joe Gallagher

Aggregate Industries, Saugus, MA
(781) 941-7200, (781) 941-7228 fax
Contact: Lou Iouliano

Planting Within Secondary Retail Areas

Where street trees are proposed within secondary retail areas, raised, grassed tree wells should be provided. These tree wells should have a minimum area of one hundred (100) square feet and should be raised six (6) inches above finished grade of the adjacent paved walkway. These areas should be contained by granite curb. See typical tree planting detail on page 40.



Planting Techniques

Plant material standards, techniques, pruning, maintenance, guarantee and care described here are for general use only. Contractors shall follow individual job specifications unless standards here are more strict. Contractors shall perform the greater amount of work.

Material Standards

All plants and planting material shall meet or exceed the specifications of Federal and State laws requiring inspection for plant disease and insect control. Quality and size shall conform with the current edition of "Horticultural Standards" for number one grade nursery stock, as adopted by the American Association of Nurserymen.

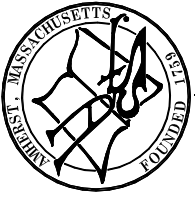
Plant materials shall be true to species and variety specified and shall be nursery grown in accordance with good horticultural practice under climatic conditions similar to those in the locality of the project for at least two years. They shall have been root-pruned within the last two years and shall be freshly dug.

Unless specifically noted otherwise, all plants shall be of specimen quality; exceptionally heavy; and symmetrical, so trained or favored in development and appearance as to be unquestionable

and outstandingly superior in form, compactness and symmetry. They shall be sound; healthy; vigorous; well-branched and densely foliated when in leaf; free of disease; insects; eggs or larvae; and shall be free from physical damage or conditions that would prevent thriving growth.

Plants shall not be pruned before delivery. Trees with multiple leaders, unless specified, will be rejected. Trees with a damaged or crooked leader, abrasion of bark, sunscalds, disfiguring knots, insect damage, or cuts of limbs over 3/4" in diameter, not completely calloused, will be rejected.

Caliper measurement shall be taken on the trunk 6" above natural ground line for trees up to 4" in caliper and 12" above the natural ground line for trees over 4" in caliper. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to tip. Plants shall be measured when branches are in their normal position. If a range of size is given, no plant shall be less than the minimum size, and not less than 50 percent of the plants shall be as large as the maximum size specified. Measurements specified are minimum size, acceptable after pruning where pruning is required. Plants that meet measurements but do not possess a normal balance between height and spread shall be rejected.



Planting Season

Planting shall be done within the following dates:

Deciduous Material: March 1 - May 15
October 15 - December 1

Evergreen Material: March 1 - June 1
August 15 - October 15

Seeding, Sodding: April 1 - June 1
August 15 - October 15

Techniques

Prepare tree and shrub pits as shown on the following details.

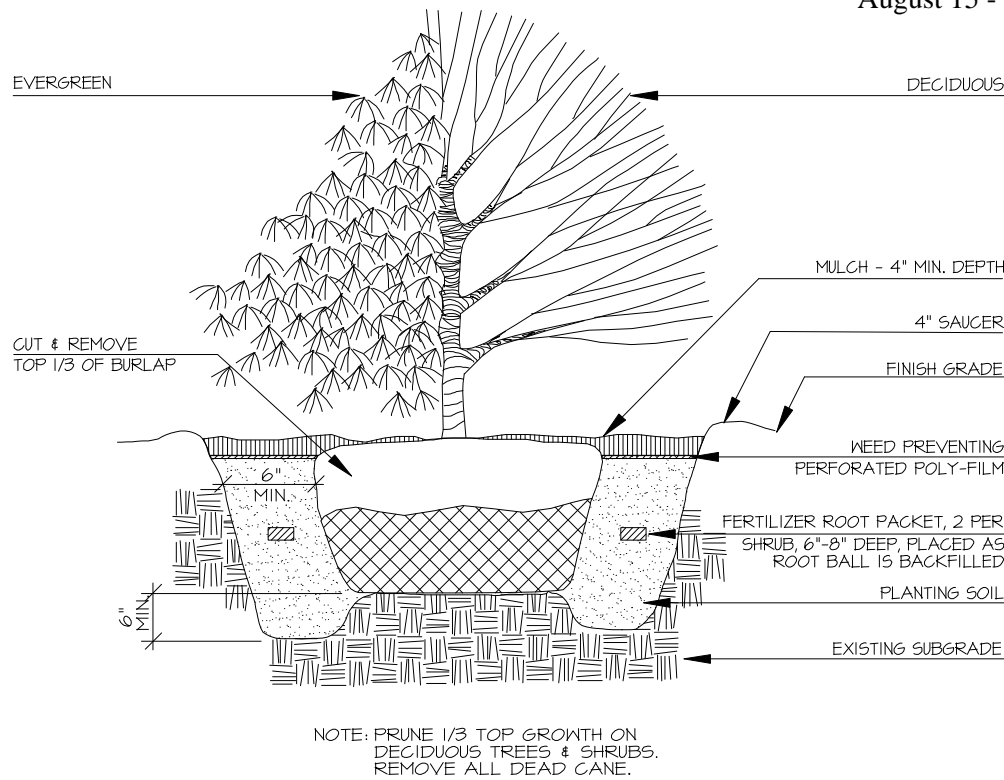
Protect plants at all times from sun or drying winds. Plants that cannot be planted immediately on delivery shall be kept in the shade, well protected with soil, wet moss, or other acceptable material and shall be kept well watered. Plants shall not remain unplanted for longer than three days after digging. Plants shall not be bound with wire or rope at any time so as to damage the bark or break branches. Plants shall be lifted and handled from the bottom of the ball only.

Set plants at same relationship to finished grade as they bore to the ground from which they were dug. Set plant plumb and brace rigidly in position until prepared topsoil has been tamped solidly around ball and roots.

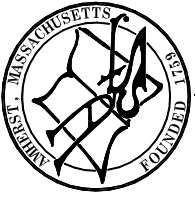
Cut and remove ropes, strings and wrappings from top 1/3 of ball after plant has been set. Leave balance of wrappings intact around ball. If wrapping is plastic, remove top 2/3.

Backfill plant pits with prepared planting soil. When plant pits have been backfilled approximately 2/3 full, water thoroughly, eliminating all air pockets. After watering, install planting soil to top of pit and repeat watering.

Form saucer around tree or shrub. Finish grade planting areas to conform to grades on detail.



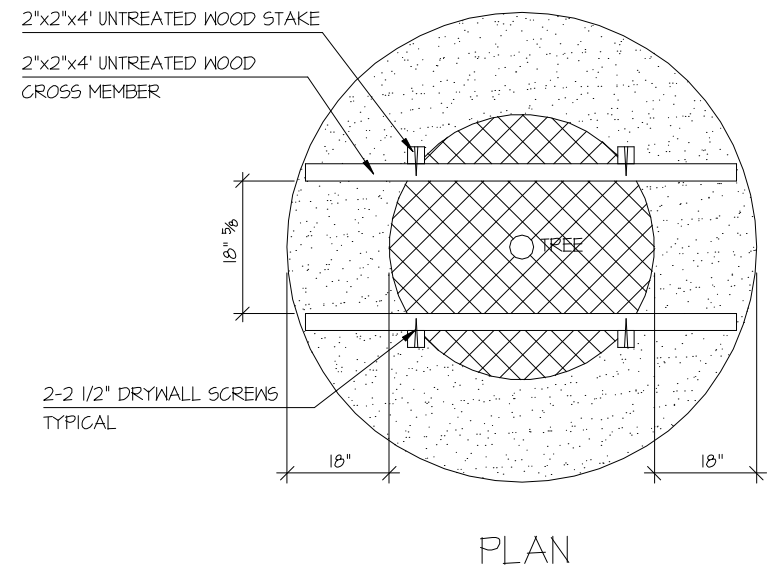
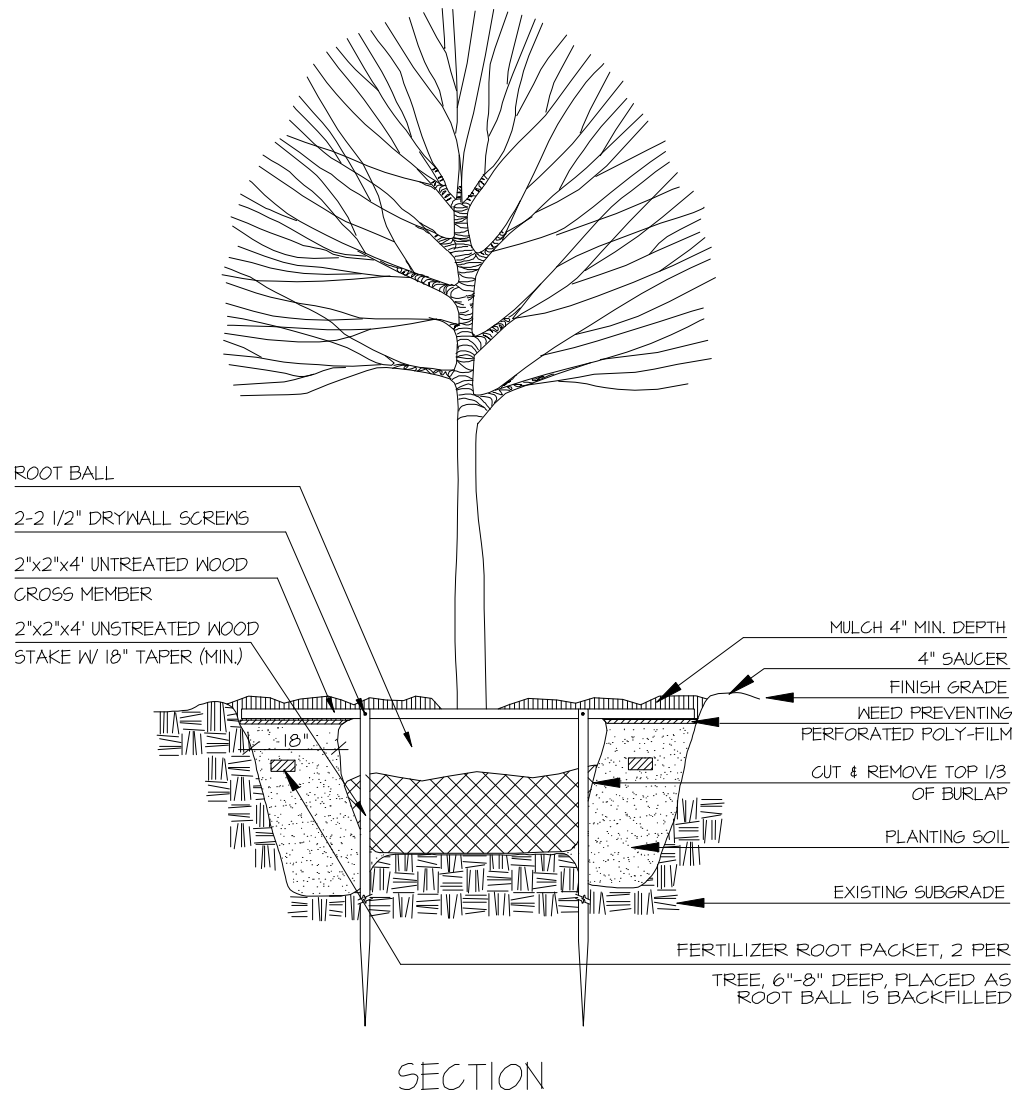
Typical shrub planting.

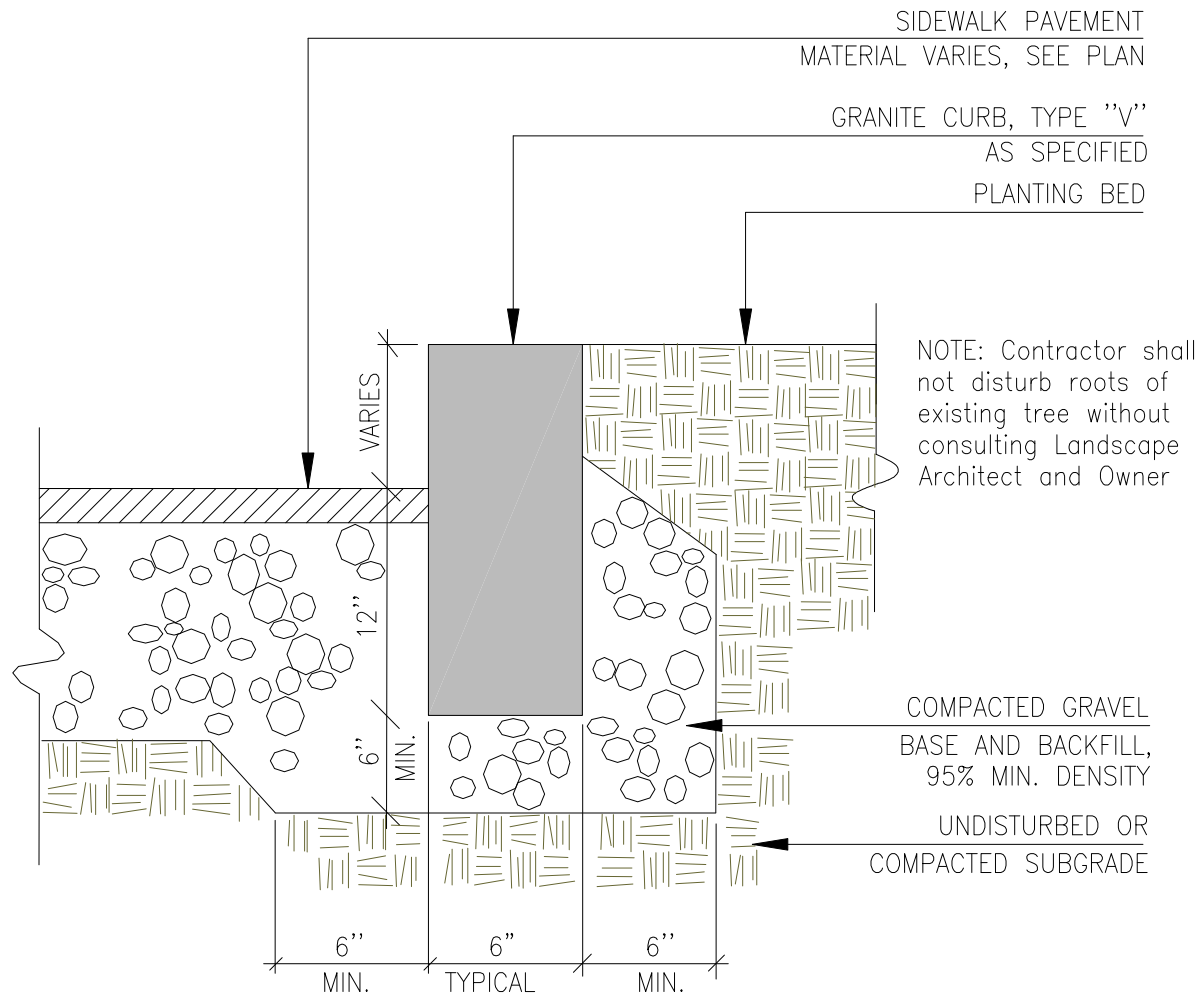
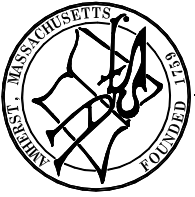


Techniques cont'd

Mulch all pits and beds with a 4" layer of shredded bark mulch immediately after planting.

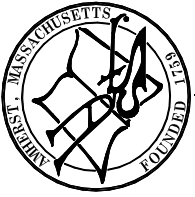
Immediately after planting, water all plants thoroughly.





Existing Trees

Existing trees designated to remain should be carefully protected throughout the construction process. Care should be taken to limit the compaction of soil around the root zone of the tree. The site conditions of each tree are unique to that tree and cannot be applied universally. Wherever possible, the proposed grades should be as close as possible to existing conditions to limit root damage or disturbance. Where this is not possible, a granite curb planter as shown in the adjacent detail may be used to meet the proposed grades.



Pruning

Remove all dead wood, suckers, and broken or badly bruised branches, unless otherwise directed by the Landscape Architect. Contractor shall not cut main leader of tree.

Use only clean sharp tools. Paint cuts over 3/4" diameter, covering all exposed, living tissue.

Maintenance

Maintenance shall consist of pruning, watering, cultivating, weeding, mulching, resetting plants to proper grades or upright position, restoration of the planting saucer, and furnishing and applying such sprays or other items as are necessary to keep the planting free of insects and disease and in thriving condition.

Planting areas and plants shall be protected at all times against trespassing and damage of all kinds for the duration of the maintenance period. If any plants become damaged or injured, they shall be treated or replaced as directed by the Landscape Architect at no additional cost to the Owner.

Provide all equipment and means for proper application of water to those planted areas not equipped with an irrigation system.

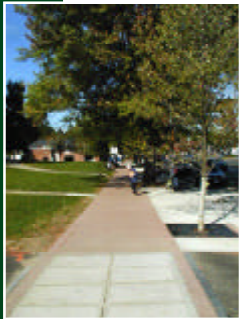
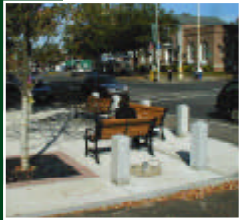
Guarantee

The guarantee period for trees and shrubs shall begin at the date of acceptance.

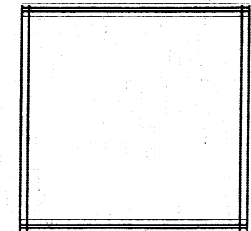
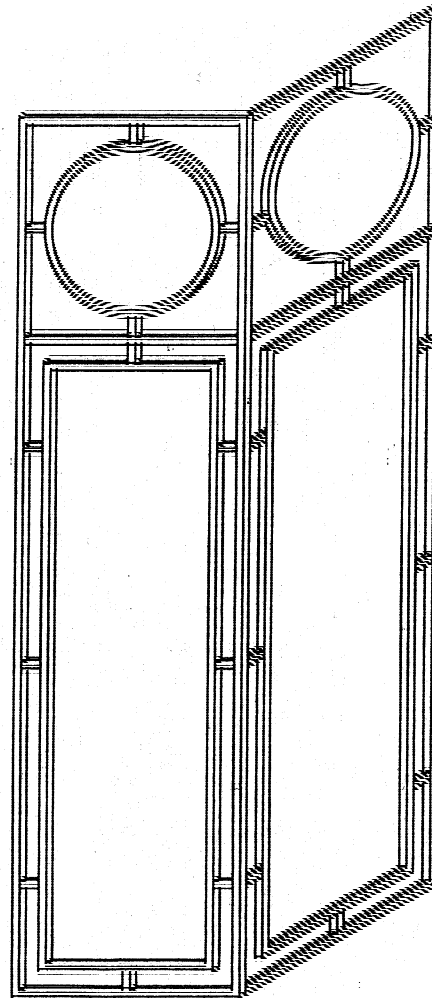
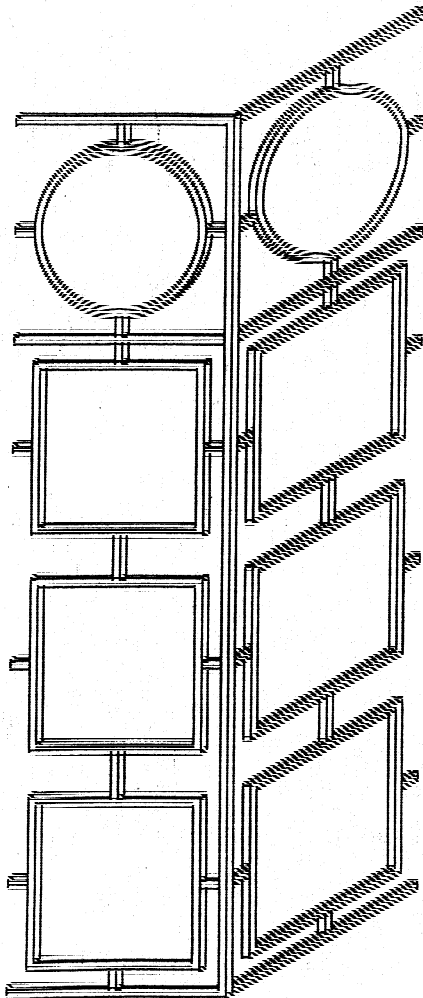
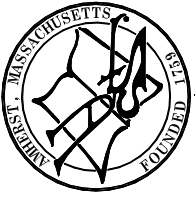
All plant material shall be guaranteed by the Contractor for a minimum period of one year from the date of Acceptance to be in good, healthy and flourishing condition.

Care of Existing Plant Materials

Upon completion of the landscape work, all existing trees shall be pruned and any injuries repaired. The amount of pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots as a result of construction operations. Roots greater than 2" shall be hand-cut to provide clean, concise, cutting and removal. Pruning shall be done in such a manner as not to change the natural habit or shape of the plant. All cuts shall be made flush, leaving no stubs. On all cuts over 3/4" diameter and bruises or scars on the bark, the injured cambium shall be traced back to living tissue and removed; wounds shall be smoothed and shaped so as not to retain water, and the treated area shall be coated with an approved tree paint.

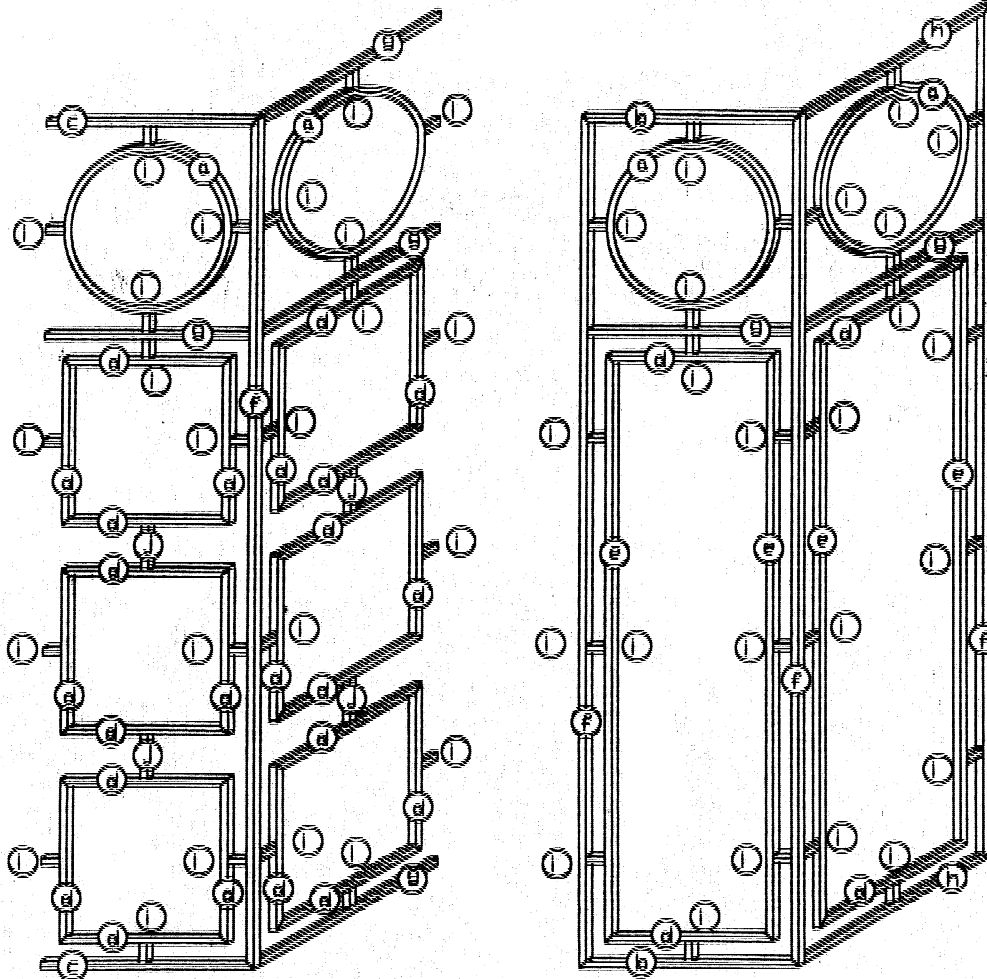
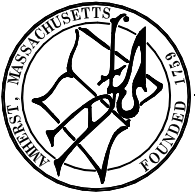


Appendix



Overhead View

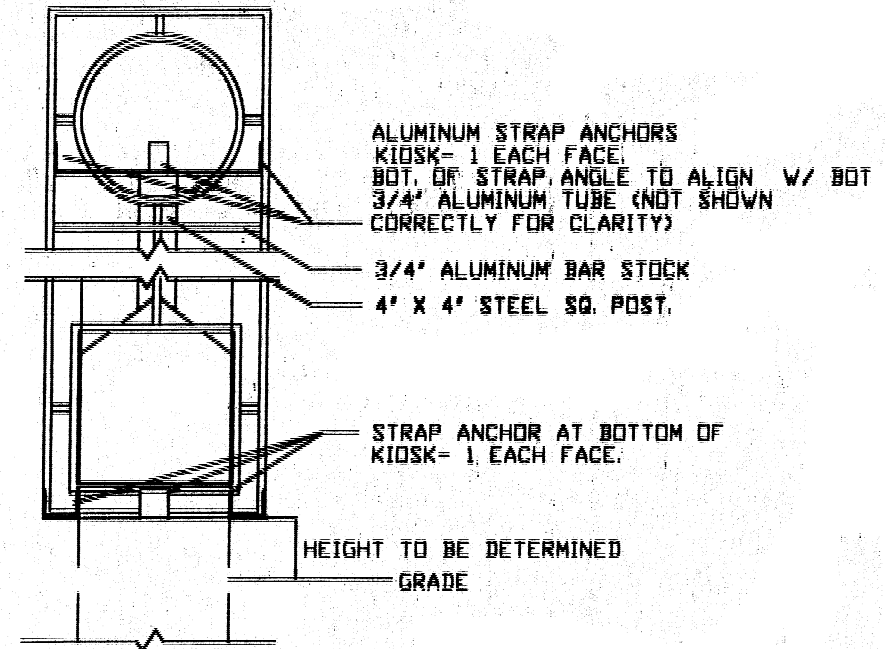
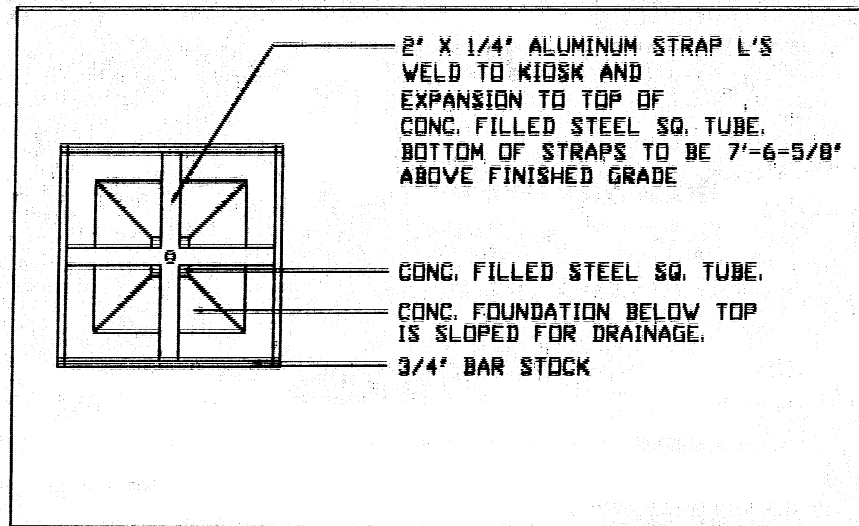
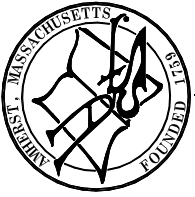
Town of Amherst
Proposed Freestanding Kiosk



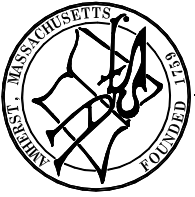
LIST OF MATERIALS

SYM.	QTY.	SIZE	REMARKS/ SPEC. INSTRUCTIONS
a	4	3/4" x 1'-6" diam.	
b	2	3/4" x 3/4" x 1'-11-1/2"	MITRE ENDS PRIOR TO WELDING
c	2	3/4" x 3/4" x 1'-11-1/2"	MITRE ENDS PRIOR TO WELDING
d	28	3/4" angle x 1'-6"	MITRE ENDS PRIOR TO WELDING <i>not bar stock</i>
e	4	3/4" angle x 1'-3-1/2"	MITRE ENDS PRIOR TO WELDING <i>not bar stock</i>
f	4	3/4" x 3/4" x 7'-3/4"	MITRE ENDS PRIOR TO WELDING
g	6	3/4" x 3/4" x 1'-10"	WELD AT END POINTS
h	2	3/4" x 3/4" x 1'-10-3/4"	MITRE AT 1 END PRIOR TO WELDING
i	48	3/4" x 3/4" x 2"	WELD AT END POINTS
j	4	3/4" x 3/4" x 4'-3/4"	WELD AT END POINTS
total	104		

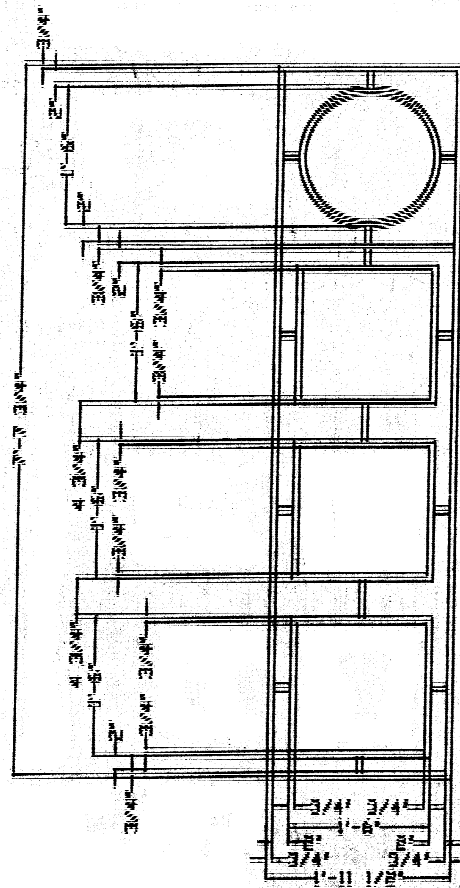
Town of Amherst
Proposed Freestanding Kiosk



Town of Amherst Mounting Detail *Proposed Freestanding Kiosk*



Directory Sign Face(s)



GENERAL NOTES:

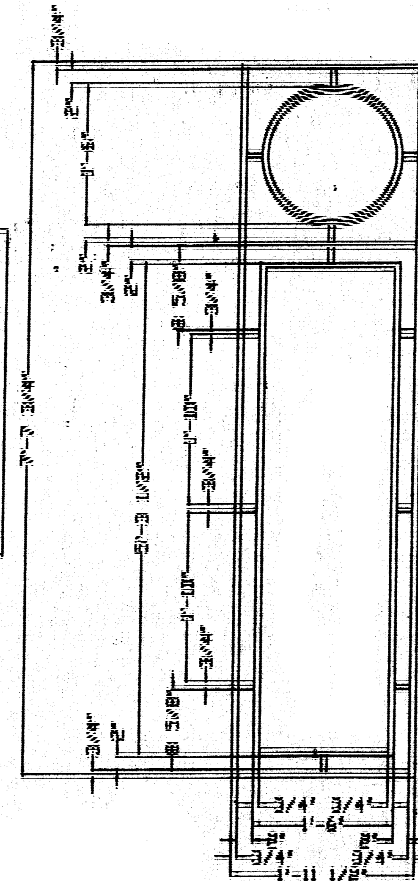
ALL PIECES TO BE WELDED AT ANY AND ALL INTERSECTING POINTS ON ALL 4 SIDES UNLESS NOTED.

PRIMARY MATERIAL IS 3/4" ALUMINUM BAR STOCK (UNLESS NOTED).

DISTANCE FROM GROUND LEVEL TO BOTTOM OF KIOSK TO BE DETERMINED.

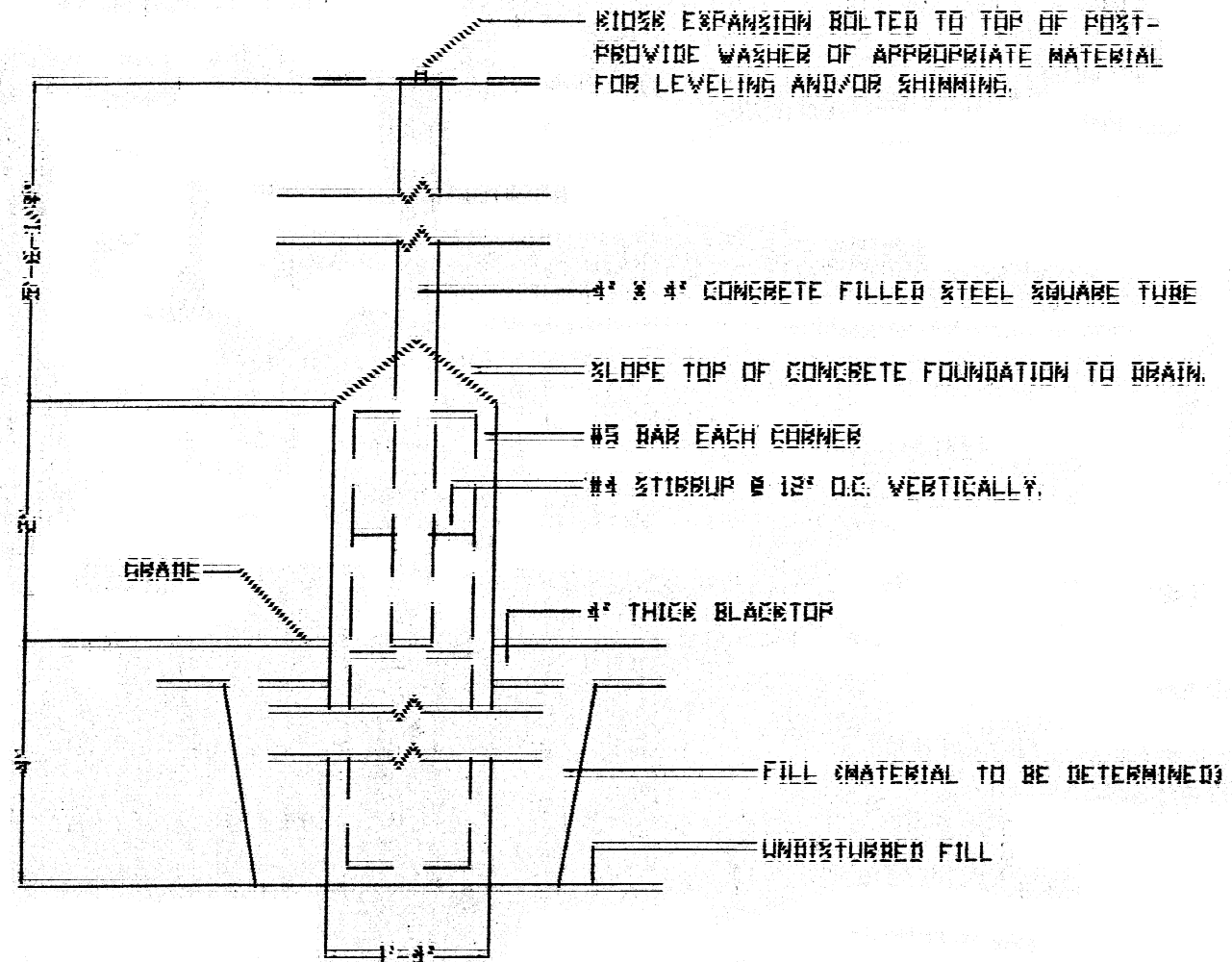
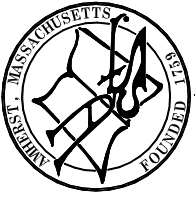
PANELS TO BE MOUNTED IN THE SAME MANNER AS ON 'COOKS BLOCK CORNER' FROM THE REAR.

Postering Kiosk Face(s)



Town of Amherst

Proposed Freestanding Kiosk, Facing Views



Town of Amherst Foundation Detail

Proposed Freestanding Kiosk